Appeal No. 2009-1383
(Application Serial No. 08/998,507)

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

IN RE ALBERT BAUER

Appeal from the United States Patent and Trademark Office,
Board of Patent Appeals and Interferences.

BRIEF FOR APPELLEE - DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

RAYMOND T. CHEN
Solicitor

WILLIAM LAMARCA
NATHAN K. KELLEY
Associate Solicitors

P.O. Box 15667
Arlington, Virginia 22215
571-272-9035

Attorneys for the Director of the United States Patent and Trademark Office

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RULE 47.5 STATEMENT OF RELATED CASES

The Director is not aware of any other appeal involving the underlying decision in this case that was previously before this or any other court. Further, the Director is not aware of any pending case in this or any other court that will directly affect, or be directly affected by, this Court's decision in this appeal.

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I. STATEMENT OF THE ISSUE

Bauer's application describes an apparatus that regulates temperature in a room by ventilating the room with heated or cooled air. Bauer's specification discloses numerous ways to control air flow into a room to adjust its temperature. Bauer is also concerned with room pressure, on the theory that ventilation improves with increased pressure. One of Bauer's embodiments shows a system that ventilates a room while varying room air pressure as a function of the selected room temperature by opening and closing air valves. Bauer also varies room pressure as a function of other variables like upstream supply pressure and supply air temperature. Bauer's claims, however, are broader than his disclosed

embodiment and are written with a means-plus-function limitation, i.e., "means for regulating an increase in pressure in the at least one room relative to an outside pressure, to vary the room pressure in correspondence to the selected room temperature." A416; 446 (emphasis added).

The primary issue on appeal is whether substantial evidence and a reasonable claim construction supports the Board's conclusion that Johannssen anticipates the rejected claims. Johannsen discloses thermostatically controlled dampers that control air flow into a room, which the Board found causes room pressure to vary in response to selected temperature. The key issue in dispute is whether Baur's recited function, i.e., "to vary the room pressure in correspondence to the selected room temperature" is satisfied by thermostatically controlled dampers as disclosed by Johannsen, or whether the recited function more narrowly requires room pressure to vary as a function of other variables in addition to the selected room temperature like upstream supply pressure and supply temperature.

II. STATEMENT OF THE CASE

Albert Bauer filed U.S. Patent Application Serial No. 08/998,507 (the '507 application) seeking a patent for an air-conditioning apparatus. A19-21.[1] After

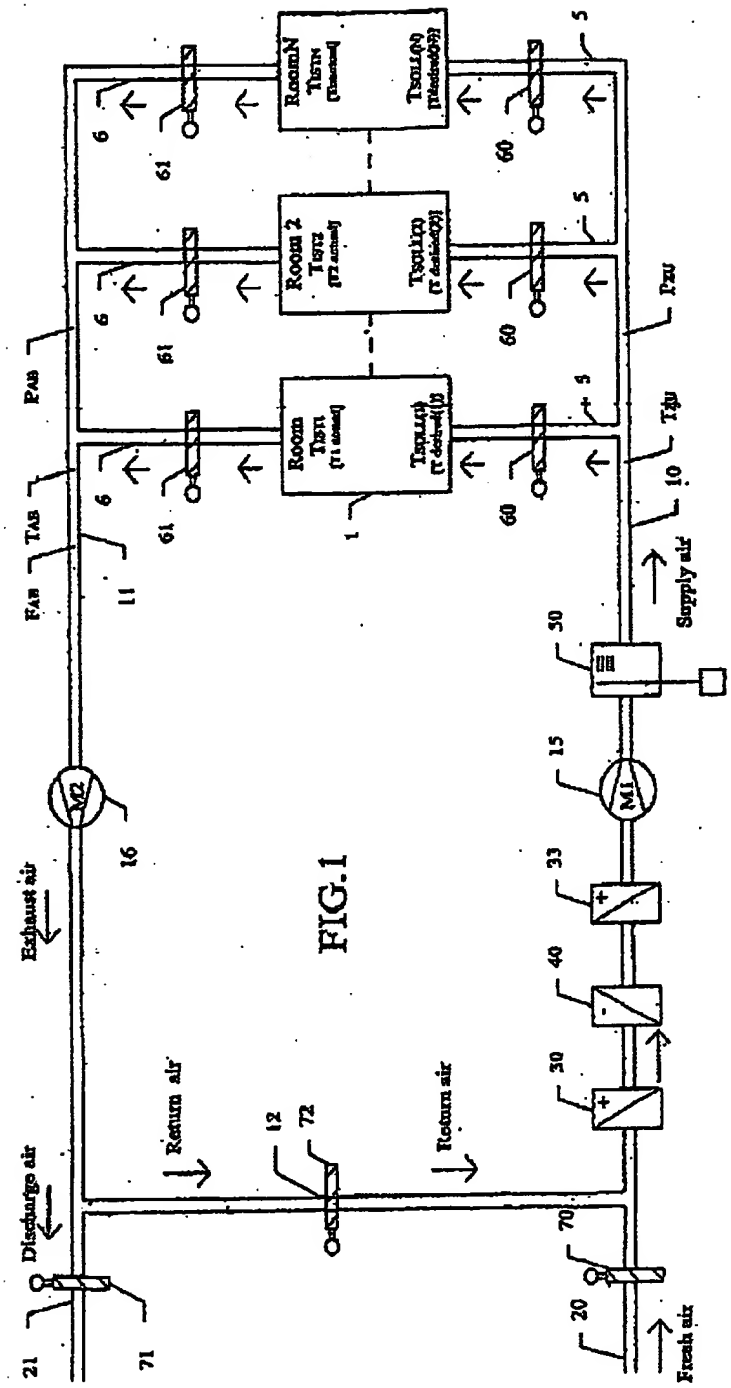
[1] Citations to Appellant's Brief will be denoted as "Br. at __," and citations to the Joint Appendix as "A__."

multiple rounds of prosecution, the examiner issued a final rejection against the pending claims. A459-481. The Board affirmed the examiner's rejection of: i) claims 44, 51-59 as anticipated by Johannsen (U.S. Patent No. 4,257,318) and obvious over Johannsen in view of Rayburn (U.S. Patent No. 5,971,067); ii) claim 45 as obvious over Johannsen in view of Benton (U.S. Patent No. 4,347,712) or alternatively over Johannsen in view of Rayburn and Benton; and iii) claim 46 as obvious over Johannsen in view of Robinson (U.S. Patent No. 4,189,094). A2-16. Bauer now appeals.

III. STATEMENT OF THE FACTS

A. Bauer's Application

Bauer's application (A331-360) relates to an air-conditioning apparatus that regulates the temperature in at least one room by ventilating the room with heated or cooled air. A331, lines 5-7. Bauer's device includes a supply air motor which feeds supply air through a supply channel to a room, a cooling/heating device in the supply channel for cooling or heating the supply air, and an exhaust motor that draws air through an exhaust channel out of the room. A332, lines 16-21. Bauer's device achieves a desired room temperature by varying the flow of cooler or warmer air into a room. Bauer shows a schematic representation of his air-conditioning system in a multi-room environment in Figure 1, which is reproduced


Room N
Room 2
Room
Exhaust air
Return air
Return air
Discharge air
Fresh air
Supply air
M1
M2
FIG.1

on the opposite page. A507. If the room temperature is too cool, air heated by heating device 30 flows into the room and brings the room temperature up to a desired level. A347, lines 4-15. Conversely, if the room is too warm, air cooled by cooling device 40, flows into the room and brings the temperature down. A347, lines 10-16. Bauer's device uses throttle valves to adjust channel pressures and allow for multi-room conditioning. A338, lines 5-15. Specifically, valves 60 and 61 control the volume of air blown in or drawn out of each room to meet a particular heating or cooling requirement as determined by a temperature regulating circuit shown in Figure 2. A352, lines 5-12.[2] As throttle valves 60 and 61 alter air flow, they also cause room pressure to vary as a function of the desired room temperature. In addition to disclosing how air flow is controlled to raise or lower temperature, Bauer discusses air pressure and how it plays a role in his air-conditioning system. Bauer's specification explains that raising pressure in a room can enhance mixing of air which improves efficiency and effectiveness of his system. A332, lines 26-28. One embodiment in the specification shows that regulation of throttle valves 60 and 61 depends upon desired room temperature,

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[2] The temperature regulating circuit in Figure 2 is shown in Figure 5 as circuit 310. A508, 509. Within circuit 310, a desired temperature is compared to the actual temperature and a difference value is supplied to regulator 320 which feeds a control signal to throttle valves 60 and 61. A352, lines 14-22.

actual room temperature, supply air temperature and supply air pressure. A352, lines 25-28. That is, in this disclosed embodiment air flow and pressure in a room is varied based on other variables besides just the selected room temperature. The recited function in the claims, however, is not that narrow and simply requires "varying room pressure in correspondence to the selected room temperature," i.e., the claims do not mention varying room pressure in correspondence to supply air temperature or pressure, or in correspondence to any condition other than selected room temperature. Claim 44, the only independent claim on appeal, recites:

> 44. An air-conditioning apparatus for controlling a temperature condition in the at least one room to achieve a selected room temperature condition for ventilation using temperature adjusted supply air comprising:
>
> a supply air motor for supplying air at a supply air pressure through a supply air channel to the at least one room;
>
> cooling-heating means for adjusting a temperature of the supply air;
>
> means for regulating an increase in pressure in the at least one room relative to an outside pressure, to vary the room pressure in correspondence to the selected room temperature.
>
> * * * *

A415; 446 (emphasis added).

B. The Prior Art

1. Johannsen

Johannsen (A724-738) discloses a pressure control system for use with a building air distribution system, e.g., with ventilation, heating or cooling systems.

A729, col. 1, lines 5-8. Within such systems, Johannsen explains that it is often desirable to control the air to maintain a desired pressure or pressure differential. A729, col. 1, lines 19-22. Johannsen points out that ventilation systems typically have various dampers and blowers, modulated under thermostatic control, to control the air flow through the ducts, which causes air pressure to vary accordingly. A729, col. 2, lines 3-8. Johannsen is specifically concerned with controlling pressure in such a system. Id., at col. 1, lines 6-7.

As Figure 1 shows, Johannsen discloses a multiple blower air distribution system including a supply blower 10 and a return blower 11. A725; A730, col. 4, lines 20-23. The outlet of blower 10 passes air through distribution duct 20. A730, col. 4, lines 31-35. Duct 20 branches out to a number of outlets through the building to distribute air. A730, col. 4, lines 36-38. Duct branches 20a and 20b lead to damper control boxes 21a and 21b. A730, col. 4, lines 38-41. Dampers are essentially air valves that open and close to allow more or less air into a room. When used with an air-conditioning system, damper control boxes 21a and 21b are operated by separate thermostats in the rooms with which their air discharge is associated. A730, col. 4, lines 41-44. Johannsen also explains that additional pressure controls and sensors can be used with such a system to avoid too low a

pressure, which may interfere with proper ventilation and too high a pressure which may waste energy. A729, col. 1, lines 5-16.

2. Rayburn

Rayburn (A709-723) discloses a building control system to control air quality. A716, col. 1, lines 5-8. In typical climate control systems, Rayburn explains that a thermostat controls the temperature of air in a building. A716, col. 1, lines 10-12. A building's central heating/cooling unit forces hot or cool air to various points in the building through a supply duct, a plurality of zone ducts and a return duct. A716, col. 1, lines 12-15. Rayburn also explains that temperature is often controlled on a zone basis and the amount of air forced through a given zone duct depends on the zone temperature, demand of the zone and the overall temperature demand of the system. A716, col. 1, lines 22-25. Rayburn's system discloses the fundamentals of a basic control system, including: a heating/cooling unit 12, a supply duct 16 and at least one, but normally a plurality of, zone ducts 18, 20. A717, col. 4, lines 45-52. Rayburn describes his system as a "smart climate control system" which includes zone dampers installed in each zone duct and each zone damper is controlled by a thermostat controller. A719, col. 7, lines 1-5. If the zone temperature is too cool, a controller requests influx of warmer air, and if too warm, a controller requests influx of cooler air. Id. at lines 6-11.

3. Additional References

Although Benton (A739-751) and Robinson (A752-760) are relied upon as secondary references in separate rejections affirmed by the Board (A3-4), Bauer does not argue them separately and therefore they will not be addressed.

C. The Board Decisions

1. Pre-Decisional Proceedings at the Board

From the outset, the claim limitation in dispute now before this Court was also the central focus at the Board. After Bauer filed his appeal, the Board's concern regarding proper claim construction caused it to order Bauer to file a supplemental brief. A489-491 (June 9, 2006 Order). The Board required Bauer to clarify whether claim 44's phrase "means for regulating an increase in pressure in the at least one room relative to an outside pressure, to vary the room pressure in correspondence to the selected room temperature" should be treated as means-plus-function language under 35 U.S.C. § 112, 6th ¶. A489. The Board also required Bauer to "clearly point out the structure described in [his] specification that corresponds to such means-plus-function" language and to "explain how such structure differs from the inlet blowers 10, 11, vanes and actuators 33, 37, 35, 31, discharge blower and thermostatically operated damper control boxes 21a, 21b disclosed in Johannsen." A490.

Not satisfied with Bauer's response (A493-503), the Board remanded the appeal to the examiner. A614-622 (Oct 31, 2006 Remand). In its remand order, the Board found that Bauer "confirmed that the language at issue is a means-plus-function recitation" (A615), but noted that Bauer failed to clarify what structure in the specification corresponds to the means-plus-function language in claim 44. A619-620. Therefore, the Board required the examiner to identify what structure in the specification performed the recited function and to make clear "exactly what that structure is and where it is disclosed for performing the recited function." A620. The examiner was also required to "identify the structure of Johannsen that meets the 'means for regulating . . .' recitation." A620-621. In his response (A623-638), the examiner identified the function as "regulating an increase in pressure in the at least one room relative to an outside pressure, to vary the room pressure in correspondence to selected room temperature" and identified corresponding structure as an "exhaust fan being regulated to maintain the rooms at certain pressure above the outside pressure" and "the action of opening and closing at least the throttle valves 60 in response to the difference between the set point temperature . . . and the actual temperature for the room." [3] A629-630. Notably, the examiner recognized "the claim has an open construction" and

[3] See also A673-687 (supplemental answer); A459-481 (answer).

Bauer's "disclosure lists a host of other variables" that room pressure can depend upon. Id.

2. Board's Decision

The Board found the claimed phrase "means for regulating an increase in pressure in the at least one room relative to an outside pressure, to vary the room pressure in correspondence to the selected room temperature," must be interpreted under 35 U.S.C. § 112, ¶6. A3 (emphasis added). In performing its analysis, the Board recognized that the prior art must: "(1) perform the identical function recited in the means limitation and (2) perform that function using the structure disclosed in the specification or an equivalent structure." A6.

Looking to the express language of the claim, the Board explained that the recited function "includes varying the room pressure in correspondence to the selected room temperature, but does not include varying the room pressure in correspondence to supply air temperature or pressure." A13.

To determine what structure corresponds to the means-plus-function phrase, the Board looked at: i) the specification, ii) Bauer's arguments, and iii) the examiner's findings. A8-10. Regarding the specification, the Board found it discloses a multi-room air-conditioning system including a supply air motor in a supply channel, an exhaust air motor in an exhaust channel, and throttle valves

through which flow of supply air to individual rooms is adjusted. A8-9. In addition, the Board noted that Bauer argued a broad interpretation of the means-plus-function claim language that included throttle valves 60 and regulating circuits disclosed in Bauer's Figure 5 as structure for performing the claimed function. A9. And, that Bauer contended that multiple ways of "varying the room pressure are discussed in the specification, such as by varying the supply air motor speed, *opening or closing a throttle valve to supply more or less air to the room*, opening or closing an exit valve, controlling both valves if both are present, or by varying the speed of an exhaust air motor, if one is used." A9 (emphasis in original). During the Board's hearing (A694-704) Bauer also stated "you could have control dampers, which are valves which allow more or less air into the room." A10; A697. Thus, the Board found Bauer's arguments supported a claim construction "broad enough to include throttle valves 60 and the valves' regulating circuits shown in Fig. 5 as corresponding structures." A10. The Board also considered the examiner's findings and agreed:

> [T]hat opening a throttle valve 60 will cause a transient increase in room pressure, however small or short-lived. This increase in room pressure will be regulated by the circuitry which controls the opening of the throttle valve. Since opening or closing a throttle valve is unlikely to have an immediate effect on the outside air pressure, the room pressure in the at least one room will increase

> relative to the outside pressure when the throttle valve opens without separate action by the supply air motor or the exhaust motor.

A11; A677. The Board also construed the language "in correspondence to" in claim 44 to be broad enough to mean "as a function of"[4] and therefore found Bauer's "comparator 310 and the regulator 320 together generate a control signal for the throttle valve 60 in correspondence to (that is, as a function of) the difference between the selected room temperature $T_{SOLL\,N}$ and the actual temperature $T_{IST\,N}$ of the room." A12.

The Board then found that all the elements of claim 44 are found in Johannsen which discloses a multiple blower air distribution system with: i) a distribution duct or supply air channel, ii) duct branches with each branch leading to a damper control box, iii) each damper control box thermostatically operated, and iv) the ability to vary room pressure in correspondence to selected room temperature in substantially the same way as throttle valves 60 and the valves' control circuitry in Bauer's specification. A12-13. In particular, the Board found Johannsen's "thermostatically operated damper control box opens or closes in response to the control signal generated by the thermostat to regulate an increase

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[4] Bauer does not dispute the Board's interpretation that "in correspondence to" can mean "as a function of." Br. at 21; A12.

in pressure in at least one room relative to an outside pressure, to vary the room pressure in correspondence to the selected room temperature" and produce the same result as Bauer's throttle valves 60 and control circuitry, namely, causing pressure variations in response to the selected room temperature. A13. Thus, the Board affirmed the examiner's rejection of claims 44, 51-59 as anticipated and/or obvious.[5]

IV. SUMMARY OF THE ARGUMENT

Johannsen either anticipates Bauer's claims or they are obvious in view of Johannsen and Rayburn. The dispute in this case centers around the final means-plus-function limitation in claim 44. The Board properly focused on the recited function, i.e., "to vary room pressure in correspondence to selected temperature" when identifying the corresponding structure. As the Board determined, the specification describes corresponding structure of throttle valves and regulating circuits that control airflow into a room to alter room temperature and vary room pressure in correspondence to selected temperature.

Bauer argues the Board construed the claims too broadly because his specification discloses embodiments that vary room pressure in response to additional variables beyond just selected temperature, e.g., upstream supply

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[5] The Board also affirmed rejection of claims 45 and 46 as obvious.

pressure and supply temperature. However, the claimed function is not so limited - - it simply requires room pressure to vary in response to just one variable, i.e., "to the selected room temperature." Further, when the function part of a means-plus-function claim corresponds to alternative structures, the claim encompass any of the alternatives, but does not require all of them.

Under the proper construction, Johannsen's disclosure of thermostatically controlled dampers, which control air flow into a room, anticipates representative claim 44. Johannsen discloses that damper valves, when opened in response to a thermostat's signal, cause more air flow into a room and necessarily increases the room pressure. Accordingly, substantial evidence supports the Board's finding that Johannsen will "vary the room pressure in correspondence to the selected room temperature." A415; 446

While the Director maintains that thermostatically controlled dampers are sufficiently disclosed by Johannsen, even if they were not, using such controls would have been obvious in view of Rayburn. Rayburn's description of thermostat controllers and dampers is more complete than Johannsen's and ultimately function as thermostatically operated damper controls. Rayburn also shows how conventional zone air-volume controllers work and Johannsen discloses a variable air volume system similar to that shown in Rayburn.

Therefore, an ordinary artisan would have found it obvious to use the familiar thermostatic damper controls of Rayburn with Johannsen's system.

V. ARGUMENT

A. Standard of Review

Bauer has the burden to show the Board committed reversible error. In re Watts, 354 F.3d 1362, 1369 (Fed. Cir. 2004). While claim construction is a question of law, during prosecution claims are construed with their broadest reasonable interpretation in light of the specification. In re Morris, 127 F.3d 1048, 1055 (Fed. Cir. 1997). The broadest reasonable construction standard also applies when the USPTO interprets means-plus-function limitations. In re Donaldson Co., 16 F.3d 1189, 1194 (Fed. Cir. 1994) (en banc).

Anticipation and whether a claim limitation is inherent in the prior art are questions of fact. See In re Schreiber, 128 F.3d 1473, 1477 (Fed. Cir. 1997); see also In re Baxter Travenol Labs., 952 F.2d 388, 390 (Fed. Cir 1991). This Court upholds the Board's factual findings if there is substantial evidence in the record to support them. In re Gartside, 203 F.3d 1305, 1315-16 (Fed. Cir. 2000).

Obviousness is a question of law supported by underlying facts. See KSR Int'l Co. v. Teleflex, Inc., 550 U.S. 398, 427 (2007); see also In re DBC, 545 F.3d 1373, 1377 (Fed. Cir. 2008). What a reference teaches and whether it teaches

toward or away from the claimed invention are questions of fact. Winner Int'l Royalty Corp. v. Wang, 202 F.3d 1340, 1349 (Fed. Cir. 2000); Para Ordnance Mfg., Inc. v. SGS Imps. Int'l, Inc., 73 F.3d 1085, 1088 (Fed. Cir. 1995).

Finally, the Board's fact findings are reviewed for substantial evidence. Gartside, 203 F.3d at 1316. Substantial evidence "is something less than the weight of the evidence but more than a mere scintilla of evidence," In re Kotzab, 217 F.3d 1365, 1369 (Fed. Cir. 2000), and "means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion," Gartside, 203 F.3d at 1312 (quoting Consolidated Edison Co. v. NLRB, 305 U.S. 197, 229 (1938)). See also In re Jolley, 308 F.3d 1317, 1320 (Fed. Cir. 2002) (this Court "will not find the Board's decision unsupported by substantial evidence simply because the Board chose one conclusion over another plausible alternative.").

B. The Director Addresses Arguments Made

Although claims 44, 45 and 46 were rejected separately, Bauer limited his arguments before this Court to the rejection of claim 44 and agreed that dependent claims 45 and 46 stand or fall with claim 44. Br. at 2. Since Bauer does not argue his dependent claims separately, they stand or fall with representative claim 44. See, e.g., In re McDaniel, 293 F.3d 1379, 1382-83 (Fed. Cir. 2002); In re Dance, 160 F.3d 1339, 1340 n.2 (Fed. Cir. 1998).

C. Johannsen Anticipates Representative Claim 44

Anticipation analysis requires two steps. First, the claims must be properly construed. Elmer v. ICC Fabricating, Inc., 67 F.3d 1571, 1574 (Fed. Cir. 1995). Second, the construed claims are compared to the prior art to determine whether all the limitations of the claims are disclosed in the prior art. Id.

1. The Board Applied the Proper Claim Construction Standard to Bauer's Means-Plus-Function Claims

Because the disputed claim phrase includes "means for" language, and because the claim lacks sufficient structure to perform the function of "regulating an increase in pressure . . . to vary the room pressure in correspondence to the selected room temperature" (A415; 446), application of Section 112, ¶ 6 is appropriate. See TriMed, Inc. v. Stryker Corp., 514 F.3d 1256, 1259-60 (Fed. Cir. 2008) (explaining the word "means" creates a presumption in favor of 112, ¶ 6, which is overcome when sufficient structure for performing the structure is recited).

A means-plus-function limitation is construed "to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112, ¶6. See also In re Donaldson Co., 16 F.3d 1189, 1193 (Fed. Cir. 1994) (en banc). Construing such a limitation requires identification of: (1) the

claimed function and (2) the corresponding structure in the written description that performs that function. Northrop Grumman Corp. v. Intel Corp., 325 F.3d 1346, 1350 (Fed. Cir. 2003).

a. Recited Function Includes Varying Room Pressure in Correspondence to Selected Room Temperature

Importantly, "[f]eatures that do not perform the recited function do not constitute corresponding structure and thus do not serve as claim limitations." Id. at 1352. Further, and significant to the dispute here, the recited function must be read independently without importing functions from a working embodiment. See JVW Enterprises, Inc. v. Interact Accessories, Inc., 424 F.3d 1324, 1331 (Fed. Cir. 2005) (one may not "import[] the function of a working device into the specific claims, rather than reading the claims for their meaning independent of any working embodiment."). Here, the function recited in disputed claim 44 is "regulating an increase in pressure in the at least one room relative to an outside pressure, to vary the room pressure in correspondence to the selected room temperature." A415; 446 (emphasis added). As the Board determined, the recited function "includes varying the room pressure in correspondence to the selected temperature but does not include varying the room pressure in correspondence to supply air temperature or pressure." A13. That construction is supported by the

express language of the claim. There is no mention in the claim of varying the room pressure in response to upstream supply pressure or supply air temperature. Further, the claims do not require any particular degree of pressure increase in response to a degree of increase in temperature, nor do they require that room pressure vary for any particular length of time.

b. Bauer's Throttle Valves and Regulating Circuits are Corresponding Structure that Perform the Recited Function

When the Board asked what structure corresponds to claim 44's recited function, Bauer provided a broad array of options. For example, during the Board's oral hearing, Bauer stated "you could have control dampers, which are valves which allow more or less air into the room." A9-10; A697. And, in response to the Board's requirement to point out corresponding structure, Bauer explained "[v]arious ways of varying the room pressure are discussed in the specification, such as by varying the supply air motor speed, opening or closing a throttle valve to supply more or less air into the room, opening or closing an exit valve, controlling both valves if both are present, or by varying speed of an exhaust air motor, if one is used." A9; A497. As the Board noted, Bauer "advanced an interpretation of the 'means for regulating an increase in pressure' broad enough to include the throttle valves 60 and the valves' regulating circuits

as shown in Fig. 5 as corresponding structures." A10. Accordingly, the Board properly determined the recited function includes "varying room pressure in correspondence to the selected room temperature" (A13) and its corresponding structure as "throttle valves 60 and the valves' regulating circuits." A8-10. Both determinations are part of the Board's claim construction. See, e.g., Northrop Grumman, 325 F.3d at 1350 ("determining the claimed function and the corresponding structure . . . is a matter of claim construction"). This Court should affirm the Board's reasonable construction. See In re Morris, 127 F.3d at 1055; Donaldson, 16 F.3d at 1194 (broadest reasonable construction rule applies with means-plus-function claims).

The reasonableness of the Board's construction is supported by Bauer's written description. As the Board found, the specification teaches that "comparator 310 and regulator 320 together generate a control signal for the throttle valve 60 in correspondence to (that is, as a function of) the difference between the selected room temperature . . . and the actual temperature . . . of the room." A12; A352, lines 14-28. Although the embodiment described in the specification shows that room pressure is altered in response to variables beyond selected room temperature (A352-353), the recited function in the claims does not require the room pressure alteration to be caused by those additional variables.

The recited function simply requires that room pressure vary in correspondence to the selected temperature and nothing more. In fact, Bauer's specification shows an example where throttle valves 60, responsive to a temperature difference, are opened 100% to increase warm air flow to raise the temperature in a single room and once a selected room temperature is reached, the valves are closed. See A358-359. That is, Bauer's own specification describes an example where air flow to a room is either wide open or closed in response to the single variable of selected room temperature consistent with the breadth of the recited function in the claims for varying room pressure. Thus, the specification and Bauer's own arguments support the interpretation that throttle valves and the valves' control circuits provide a structure that corresponds to the claimed "means for regulating an increase in pressure in the at least one room relative to an outside pressure, to vary the room pressure in correspondence to the selected room temperature." A415; 446.

c. Bauer's Claim Construction Arguments Fail

Bauer primarily argues that the Board too broadly construed his claims. Br. at 14, 26-32. According to Bauer, his claims requires that room pressure be varied "in correspondence to" other variables in addition to the selected temperature (e.g., dependent upon upstream supply pressure as well as depending on selected

temperature), because some of his embodiments work that way. Br. at 27 (Bauer argues the Board failed to appreciate in his system "the zone dampers are not controlled only by thermostats" but his "dampers also receive pressure control signals."). Nevertheless, the claims simply state that the regulated pressure is varied "in correspondence to the selected room temperature"; no other variables are recited. As the Board noted, the recited function "includes varying the room pressure in correspondence to the selected room temperature, but does not in include varying the room pressure in correspondence to supply air temperature or pressure." A13.

Bauer's argument violates fundamental tenets governing the determination of the function in a means-plus-function limitation. Bauer "may not construe a means-plus-function limitation 'by adopting a function different from that explicitly recited in the claim.'" See JVW Enterprises, Inc., 424 F.3d at 1331 (citing Micro Chem., Inc., v. Great Plains Chem. Co., 194 F.3d 1250, 1258 (Fed. Cir. 1999)). Here, that is precisely what Bauer is attempting to do. Bauer seeks to adopt a function narrower than that explicitly recited by arguing that room pressure must vary in correspondence to other variables in addition to the selected temperature (e.g., upstream supply pressure). While the recited function is broad enough to encompass varying room pressure in correspondence to other variables

besides selected room temperature, it is not a requirement of the claims. Put another way, Bauer may not "import[] the function of a working device into the specific claims, rather than reading the claims for their meaning independent of any working embodiment." Id. (citing Rodime PLC v. Seagate Tech, Inc, 174 F.3d 1294, 1303 (Fed. Cir. 1999)).

Here, the Board properly construed the claims including the recited function that room pressure is varied "in correspondence to" a selected room temperature, i.e., variance in room pressure depends upon the selected temperature. Regarding corresponding structure, the Board also found the specification shows "opening a throttle valve 60 will cause a transient increase in room pressure" and the "increase in room pressure will be regulated by the circuitry which controls the opening of the throttle valve."[6] A11. While Bauer argues the Board erred in construing the claims to only require "transient" increases in pressure (Br. at 3, 14, 32), nowhere does the recited function require that pressure must vary or be increased for any particular length of time.

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[6] The Board found "comparator 310 and the regulator 320 together generate a control signal for the throttle valve 60 in correspondence to (that is, as a function of) the difference between the selected room temperature . . . and the actual temperature" and therefore performs the recited function. A12.

Accordingly, the Board determined that thermostatically controlled dampers will similarly perform the recited function as Bauer's valves 60 and valves' regulating circuits. A12-13. As the Board reasoned, a thermostat set to a temperature above the actual temperature will cause dampers to open causing an increase in flow and pressure in response to a selected temperature, i.e., the thermostat sends a signal to open an air damper and allows an influx of warmer air which causes an increase in pressure in the room. Id. Thus, the Board's construction is consistent with the recited function because it requires pressure in a room to vary in a dependent fashion upon a selected temperature.

Finally, while Bauer's specification contemplates various additional types of controls to achieve his recited function, his claims do not preclude the use of only thermostatically controlled dampers as a control device. It is settled that when the function of a means-plus-function claim corresponds to alternative structures, the claims encompass any of the structures, but do not require all of them. See, e.g., Serrano v. Telular Corp., 111 F. 3d 1578, 1583 (Fed. Cir. 1997) (Disclosed structure includes that which is described in a patent specification, including any alternative structures identified.); see also Ishida Co., Ltd. v. Taylor, 221 F. 3d 1310, 1316 (Fed. Cir. 2000) (For means-plus-function patent claim,

disclosed structure includes that which is described in a patent specification, including any alternative structures identified). Bauer himself stated that the air flow and room pressure could be controlled by using any one of a wide array of techniques. See A9 (Bauer stated "[v]arious ways of varying the room pressure are discussed in the specification, such as by varying the supply air motor speed, opening or closing a throttle valve to supply more or less air to the room, opening or closing an exit valve, controlling both valves if both are present, or by varying the speed of an exhaust air motor, if one is used."). In fact, during the Board's hearing, Bauer stated "[y]ou could have control dampers, which are valves which allow more or less air into the room." A10.

In light of the explicit recited function in the claims and the specification's broad array of possible control techniques, construing the claims to encompass the use of a thermostatic control to control air valves or dampers is reasonable. See Morris, 127 F.3d at 1055.

2. Johannsen Discloses all Elements of Claim 44 including Structure that Performs the Function of Varying Room Pressure in Correspondence to Selected Temperature

Johannsen anticipates representative claim 44 because it discloses each of the claimed elements, including the disputed "means for regulating an increase in pressure in the at least one room relative to an outside pressure, to vary the room

pressure in correspondence to the selected room temperature." Johannsen discloses an air distribution system, including a blower 10, a distribution duct 20 or supply air channel with duct branches 20a and 20b that lead to damper control boxes 21a and 21b. See A730, col. 4, lines 20-41. Johannsen explains its air distribution system is used in the context of ventilation, heating or cooling systems. A729, col. 1, lines 5-10. See also A730, col. 4, lines 31-35 (used in the context of air conditioning system). Johannsen's damper control boxes are thermostatically controlled by separate thermostats in the zones or rooms with which their air discharge is associated. A730, col. 4, lines 41-44. As the examiner found, during summer when a thermostat senses a room is too hot, it signals a damper box to open, increasing the influx of cooler air and when the room has been cooled to a set point, a thermostat signals the damper box to close, stopping the flow of air. A634; 682. Likewise in winter, if a thermostat senses the room is too cold, it signals a damper to open and increase the influx of warmer air to bring the temperature up to a desired level. Id.

Johannsen also discloses that varying influx of the cooler or warmer air resulting from opening and closing dampers in response to thermostatic control will cause air pressure to vary relative to the pressure outside. See, e.g., A729, col. 2, lines 3-8. As the examiner found, "[i]t is absolutely clear that the room

pressure must vary as a function of the selected room temperature (set on the thermostat) in each room in Johanssen." A635; 683. As the examiner reasoned:

> When the damper unit opens, responsive to a call for conditioned air from its associated thermostat, the room pressure rises . . . . [E]ach room in Johannsen, to use Appellant's analogy, is like a tire and when the thermostatically controlled damper unit opens, the air from the pressure regulated supply duct . . . flows into the room and builds up the pressure.

A635; 683. Beyond the pressure variations that take place in response to thermostatic controlled dampers, Johannsen also explains that it regulates pressure inside rooms to a higher pressure than the outside pressure to prevent infiltration of unwanted air from outside the room from entering. See, e.g., A734, col. 12, lines 57-61 ("in actual practice, the return blower is operated at slightly less than the values indicated in Figure 5[7] so that a slight positive pressure will be maintained in the building to prevent infiltration."). Accordingly, Johannsen discloses all of the elements of claim 44 including "regulating an increase in pressure in the at least one room relative to an outside pressure, to vary the room pressure in correspondence to the selected room temperature."

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[7] Fig. 5 shows an air flow relationship between a discharge and return blower in a typical distribution system. A734, col. 12, lines 39-43.

a. Bauer's Argument Regarding Johannsen Fail

Bauer alleges that "Johannsen fails to disclose the thermostatic control which operates the dampers shown in Figure 1" and that "there is no controller inherently present which would operate these dampers to 'vary the room pressure in correspondence to the selected room temperature.'" Br. at 11, 32. Bauer misreads Johannsen. As the Board found (A5, A12), Johannsen states that its "damper control boxes . . . would be thermostatically operated, in the case of an air conditioning system, by separate thermostats in the zones or rooms of the building with which their air discharge is associated." A730, col. 4, lines 41-44 (emphasis added). Further, Johannsen explains that "under local thermostatic control in the case of an air conditioning system, the air flow demand through the distribution ducts and hence the pressure therein will vary accordingly." A729, col. 2, lines 3-8 (emphasis added). Thus, Johannsen clearly discloses a controller (i.e., a thermostat) that controls its dampers which vary the airflow into a room and therefore vary air pressure in correspondence to selected temperature.

Further, Bauer's allegation that Johannsen does not show thermostatic control and teaches away because it explains the "temperature control loops are not part of [its] pressure control system" is misplaced. Br. at 11, 32. The issue of teaching away is not relevant in an anticipation context. Regardless, Bauer is

factually wrong - - Johannsen does disclose the use of thermostatically controlled dampers. A730, col. 4, lines 41-43 (explaining that damper control boxes are thermostatically controlled by separate thermostats). Johannsen simply omits those elements from Figure 1 because they are not part of his improvement. As Johannsen explains, the "temperature control loops are not part of [his] pressure control system" and have "been omitted from Fig. 1." A730, col. 4, lines 45-47. Johannsen's invention is specifically drawn to pressure control features for use with thermostatically controlled dampers. As the examiner found, "even though . . . [the temperature control loops] have been omitted because of their conventionality, they must be present for the Johannsen system to temperature condition the individual rooms." A467.

Bauer further argues that "Johannsen does not vary the pressure" because the inlet blower and exhaust match each other and therefore keep the pressure constant. Br. at 24-25 (referring to Fig. 5 of Johannsen). And, allegedly "without a direct linkage of the pressure and temperature control signals, Johannsen's pressure regulation system cannot vary room pressure in correspondence to the selected room temperature." Br. at 25. To the contrary, as the examiner found, Johannsen explains that the inlet blower and exhaust do not match each other. A734, col. 12, lines 57-61 (return blower operated at less than the return blower to

maintain positive pressure in the room); A727 (Fig. 5 shows an offset between return blower and discharge blower volume); A681. Moreover, Johanssen clearly explains that the opening and closing of dampers in response to a thermostatic control will cause air flow and air pressure to vary. See A729, col. 2, lines 3-8 ("[a]s the various dampers or outlet controls in the air distribution system are modulated to control airflow, for example under local thermostatic control in the case of an air conditioning system, the air flow demand through the distribution ducts and hence the pressure therein will vary accordingly."). That is, when a damper is opened, in response to a thermostatic control signal, pressure in the room will necessarily vary as a result of the increased air flow and that pressure variance takes place "in correspondence to" or "as a function of"[8] the selected temperature. It is precisely because of these pressure changes that Johannsen uses additional pressure controls to reduce large pressure variations for comfort and efficiency. Moreover, Johannsen limits but does not eliminate pressure variations. Some amount of pressure variation is necessary, even in Johannsen's system. See, e.g., A729, col. 2, lines 13-15 ("Too low pressure may interfere with proper ventilation or damper operation, and too high pressure will simply waste energy").

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[8] Br. at 21 (Bauer does not dispute the Board's interpretation that "in correspondence to" can mean "as a function of."). See also A12.

Thus, contrary to Bauer's assertion, Johannsen discloses that room pressure varies in correspondence to the selected temperature to the extent required by the recited function in the claims.

Further, Johannsen's Figure 5, referenced by Bauer (Br. at 24-25), which shows a tracking relationship between supply and exhaust blowers, does not alter the fact that pressure will vary in correspondence to the opening or closing of thermostatically controlled damper, i.e., pressure will increase as air inflow increases and will decrease as air inflow declines. Figure 5 simply clarifies a positive pressure must always be maintained in a given room to prevent infiltration. A734, col. 12, lines 57-61. In fact, Figure 5 confirms the recited "means for regulating an increase in pressure in the at least one room" is satisfied. To be clear, Johannsen's intent is to use its pressure control system to monitor pressure variances caused by thermostatically triggered dampers and protect against too low or too high a pressure. A729, col. 2, lines 8-13. Even with Johannsen's added pressure controls, however, pressure variances in response to thermostatically controlled dampers must take place. See A729, col. 2, lines 13-15 (too low a pressure interferes with proper ventilation). As the examiner reasoned, when "the thermostatically controlled damper unit opens, the air from the pressure

regulated supply duct . . . flows into the room and builds up pressure." A467-468; A635; A683.

D. Claim 44 is Also Obvious in View of Johannsen and Rayburn

Claim 44 was also rejected as obvious in view of Johannsen and Rayburn. A14; A379-384; A469. A claimed invention is unpatentable if the differences between it and the prior art "are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. § 103 (a). The only element potentially not fully disclosed by Johannsen is a thermostat that provides control signals to dampers in response to selected temperature. While the Director maintains that thermostatically controlled dampers are sufficiently disclosed by Johannsen, even if they were not, using such controls would have be obvious view of Rayburn.

As the Board found, "Rayburn's description of the zone thermistors, thermostat controllers and zone dampers is more complete than Johannsen's description of the thermostatically operated damper control boxes" and "ultimately functions as thermostatically operated damper controls." A14. And, an ordinary artisan would have been motivated to augment or enhance Johannsen's system with the further specifics of Rayburn's thermostatic controls. See, e.g., A718, col. 5, lines 25-40 (Rayburn explains how a thermostat controls temperature in a

room); A719, col. 7, lines 1-14 (Rayburn uses thermostatically controlled zone dampers). As the examiner found, Rayburn shows "how conventional zone air-volume controllers work" and "Johannsen is disclosing a variable air volume system such as shown by Rayburn." A380-384 at A383 (citing A719). Therefore, an ordinary artisan would have found it obvious to use the familiar thermostatic damper controls of Rayburn with Johannsen's system. That combination would yield a device satisfying the claimed function of "regulating an increase in pressure in the at least one room relative to an outside pressure, to vary the room pressure in correspondence to the selected room temperature." A415 (claim 44). See KSR, 550 U.S. at 401 ("combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.").

Bauer argues[9] that the "Board did not find that Rayburn discloses any means for regulating room pressure in correspondence to the selected room temperature, only disclosing more details on the elements of the thermostatically controlled dampers." Br. at 36. However, Bauer cannot show non-obviousness by attacking

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[9] To the extent that Bauer repeats the same arguments he made against Johanssen in the anticipation context, the Director relies on the responses already provided. See Br, at 35 (Bauer states "the arguments made above relative to Johannsen are equally applicable to the rejection for obviousness.").

Rayburn individually when the rejection is based on the combination of Johannsen and Rayburn. In re Merck & Co., Inc., 800 F.2d 1091, 1097 (Fed. Cir. 1986). The Board relied upon Rayburn simply for the detailed features of thermostatic control system to be used with Johannsen's dampers. A14.

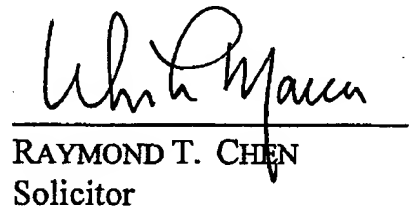
Nor does Johannsen teach away from the claimed invention as argued by Bauer. Br. at 36. As already explained, simply because Johannsen's disclosure includes additional pressure controls to eliminate large sways in pressure variation for comfort and efficiency, does not detract from the fact that Johannsen discloses the use of thermostatically controlled dampers to control room temperature, which necessarily causes room pressure to vary as a function of selected temperature.

Finally, Bauer argues that the result of using his system "are surprising." Br. at 36-37. To the extent Bauer now attempts to argue unexpected results as secondary considerations of non-obviousness, his assertions in his brief amount to mere attorney argument which cannot take the place of evidence. See, e.g., In re Budnick, 537 F.2d 535 (CCPA 1976); In re Schulze, 346 F.2d 600, 602 (CCPA 1965) (arguments of counsel cannot take the place of evidence in the record.). Although Bauer may have displayed an informational video during an examiner interview, he never presented any affidavit or declaration regarding the video or linking the video to any alleged unexpected results for consideration by the

examiner or the Board. See 37 C.F.R. § 1.132 (When any claim of an application or a patent under reexamination is rejected or objected to, any evidence submitted to traverse the rejection or objection on a basis not otherwise provided for must be by way of an oath or declaration under this section.).

VI. CONCLUSION

Because the Board's fact findings are supported by substantial evidence and its claim construction is reasonable, this Court should affirm its decision.



RAYMOND T. CHEN
Solicitor

WILLIAM LAMARCA
NATHAN K. KELLEY
Associate Solicitors

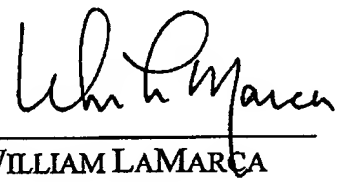
P.O. Box 15667
Arlington, Virginia 22215
571-272-9035

Attorneys for the Director of the United States Patent and Trademark Office

December 8, 2009

CERTIFICATE OF COMPLIANCE

I certify that the foregoing BRIEF FOR APPELLEE DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE complies with the type-volume limitation pursuant to Fed. R. App. P. 32 (a) (7)(B) and the Federal Circuit Rule 32 (b). The total number of words in the foregoing brief is 7,653 as calculated by the Word Perfect (version 11.0) program.



WILLIAM LAMARCA
Associate Solicitor

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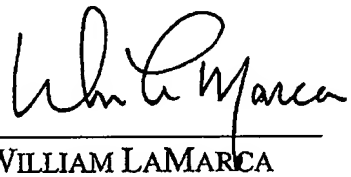
I hereby certify that on December 8, 2009, I caused two copies of the foregoing BRIEF FOR APPELLEE DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE to be sent by U.S. Mail (first class) to:

William J. Sapone
Coleman Sudol Sapone P.C.
714 Colorado Avenue
Bridgeport, Connecticut 06605
(203) 366-3560



WILLIAM LAMARCA
Associate Solicitor